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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/844,847	04/27/2001	Pedro S. de Souza	020431.0862	2784

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EXAMINER

TO, BAOQUOC N

ART UNIT	PAPER NUMBER
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2172

DATE MAILED: 06/30/2004

4

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/844,847

Applicant(s)

DE SOUZA ET AL.

Examiner

Baoquoc N To

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 April 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-29 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 30-32 is/are allowed.
- 6) ☐ Claim(s) _____ is/are rejected.
- 7) ☒ Claim(s) 7, 16 and 25 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

1. Claims 1-32 are pending in this application.

Response to Arguments

2. Applicant's arguments filed 04/04/2004 have been fully considered but they are not persuasive.

The applicant argues "Nwabueze cannot be properly considered an optimization engine."

After carefully review the reference, the examiner disagrees with the above argument. Nwabueze suggest the online analytical processing (OLAP) wherein the OLAP software can locate the intersection of dimensions and display them For example, a newspaper company such as the www.samplecompany.com many learn that of all visitor to its web site over previous quarter (dimension) 80 percent of the visitors initially open the politics page (measure) and then 70 percent of the same visitors move to the spots page (70) percent of the same visitors move to the sports page (measure). This data can be used to make business decision including what type of ads to place on the web site, where to locate the ads and how to make navigation of the web site easier fro the most frequent users." (col. 7, lines 5-19). This is an optimization engine.

The applicant also argues "Nwabueze fails to disclose, teach, or suggest an optimization engine, Nwabueze also necessarily fails to disclose, teach, or suggest, as recited in independent claim 1: receiving input from a user specifying problem instance to be solved using an optimization; the optimization engine being unable to solve the

problem instance in the multi-dimensional format; and transforming the problem instance into a format appropriate for the optimization engine; and communicating the transformed problem instance to the optimization engine to be solved.

The examiner respectfully disagrees with the above argument. Nwabueze suggests "the data transforming engine converts the pre-processed data from the various data sources and varying data formats to a uniform format. The data transforming will identify and open each file of the pre-processed acquired data (also referred to as acquired raw data) from each individual storage file, memory map each file into a temporary database according to processing rules of the COP, convert the data to a uniform format and return each file of the processed data to a storage file." (col. 8, lines 30-39). This suggests the raw data is the problem wherein the data must convert into the uniform format for the optimization engine to process.

The applicant also argues "Nwabueze fails to disclose, teach, or suggest that the preprocessed data and the report are to be solved in any way."

The examiner respectfully disagrees with the above argument. Nwabueze suggests the data cannot be processed because the problem is the raw data in the various formats, it needed to be formatted in the one uniform in order for the optimization to process and to send the report (col. 8, lines 30-67 to col. 9, lines 1-19). The raw data is the problem associated with the optimization engine to solve.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1-6, 8-15, 17-24 and 26-29 are rejected under 35 U.S.C. 102(e) as being anticipated by Nwabueze (US. Patent No. 6,611,839).

Regarding on claim 1, Nwabueze teaches a system for optimization using multi-dimensional data, comprising:

Using a multi-dimensional data model (OLAP cube), organize data stored at one or more data storage locations, the multi-dimensional data model including a plurality of data dimension each including a hierarchy of members (the number people visits to a set site in a day, week month or year time frame) (col. 6, lines 60-65);

Receiving input from a user specifying a problem instance (raw data) to be solved using an optimization engine (OLAP cube) (col. 6, lines 56-67), the problem instance specified by the user in a multidimensional format, the optimization engine being unable to solve the problem instance in the multi-dimensional format (col. 8, lines 30-51); and

Communicate the problem instance in the multi-dimensional format (data acquisition engine acquires the desired data from the various data sources) (col. 7, lines 49-50); and

Transform module (a data transforming) (col. 8, lines 30-32) operable to:

Communicate the problem instance in the multi-dimensional format (col. 6, lines 39-46);

Transform the problem instance into a format appropriate for the optimization engine (col. 8, lines 30-34); and

Communicate the transformed problem instance to the optimization engine to be solved (col. 9, lines 10-15).

Regarding on claim 2, Nwabueze teaches the transformation module is further operable to:

Receive a solution associated with the problem instance from the optimization engine (col. 6, lines 39-46);

Transform the solution into the multi-dimensional format (col. 9, lines 30-35); and

Communication the transformed solution to the server (col. 8, lines 33-39).

Regarding on claim 3, Nwabueze teaches a business repository operable to store the multi-dimensional data model, the server further operable to communicate with the business repository to access data specified using the multi-dimensional format (col. 6, lines 56-65).

Regarding on claim 4, Nwabueze teaches transforming (transforming) the problem instance comprises:

Parsing (the data transforming engine will identify and open each file of the pre-process acquired data) the received problem instance to identify pre-defined multidimensional syntax (col. 8, lines 33-37); and

Translating (transforming) the multi-dimensional syntax (various data sources and varying data formats) to a syntax (uniform format) appropriate for the optimization engine (col. 8, lines 30-33).

Regarding on claim 5, Nwabueze teaches transforming (transforming) the problem instance comprises generating multiple problem constraints (various sources data) in a format appropriate for the optimization engine from a single problem (a uniform format) (col. 8, lines 30-42) constraint included in the received problem instance, the single problem constraint identifying a member in each data dimension to which the constraint is applicable (col. 8, lines 30-42).

Regarding on claim 6, Nwabueze teaches transforming the problem instance comprises importing data applicable to the problem instance from one or more data storage locations, the imported data being included in the transformed problem instance in a format appropriate for the optimization engine (col. 8, lines 33-37).

Regarding on claim 8, Nwabueze teaches one or more data measures included in the objective function have an associated data value in a data storage location for

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each of one or more intersections (intersection) in the problem domain (col. 7, lines 7-8).

Regarding on claim 9, Nwabueze teaches the objective function further comprises an aggregation (aggregation engine) domain for each data measure (col. 8, lines 52-55).

Regarding on claim 10, Nwabueze teaches the server is further operable to replicate (converts) a single constraint (a uniform format) in the multi-dimensional format into multiple constraints in the multi-dimensional format, the single constraint including one or more coverage sets identifying multiple members of one or more data dimensions (day, week and year) (col. 6, lines 60-67) to which the constraint applies (col. 8, lines 30-43).

Regarding on claims 11, 20 and 29, Nwabueze teaches a method for optimization using multi-dimensional data, comprising:

Receiving a problem instance to be solved using a optimization engine (dynamic report), the problem instance specified in a multi-dimensional format (various data sources) (col. 7, lines 49-50) associated with a multi-dimensional data model that includes a plurality of data dimensions each including a hierarchy of members (descriptive categories or business metrics (dimensions) and quantitative (measures).

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(col. 6, lines 60-63), the optimization engine being unable to solve problem instance in the multi-dimensional format (convert to a uniform format) (col. 8, lines 30-43);

Using a transformation module (data transform module) (col. 8, line 31), transforming the problem instance (transforming pre-processed data from the various data sources) into a format (a uniform format) appropriate for the optimization engine (col. 8, lines 30-33); and

Communicating (a data acquisition engine acquires the desired data from various source) the transformed problem instance to the optimization engine to be solved (col. 7, lines 49-52).

Regarding on claim 12 and 21, Nwabueze teaches receiving a solution associated with the problem instance from the optimization engine; and

Using the transformation module (data transform module), transforming the solution into the multi-dimensional format (col. 8, lines 31-43).

Regarding on claims 13 and 22, Nwabueze teaches the transforming the problem instance comprises:

Parsing (the data transforming engine will identify and open each file of the preprocess acquired data) the received problem instance to identify pre-defined multi-dimensional syntax (col. 8, lines 33-37); and

Translating (transforming) the multi-dimensional syntax (various data sources and varying data formats) to a syntax (uniform format) appropriate for the optimization engine (col. 8, lines 30-33).

Regarding on claims 14 and 23, Nwabueze teaches the transforming (transforming) the problem instance comprises generating multiple problem constraints (various sources) in a format appropriate (a uniform format) for the optimization engine from a single problem constraint included in the specified problem instance, the single problem constraint identifying a member in each data dimension to which the constraint is applicable (col. 8, lines 30-42).

Regarding on claims 15 and 24, Nwabueze teaches transforming the problem instance comprises importing (acquisition engine acquires data from various sources) data applicable to the problem instance from one or more data storage locations, the imported data being included in the transformed problem instance in a format appropriate for the optimization engine (col. 7, lines 49-50).

Regarding on claims 17 and 26, Nabueze teaches one or more data measures included in the objective function have an associated data value in a data storage location for each of one or more intersections (intersection) in the problem domain (col. 7, lines 5-10).

Regarding on claims 18 and 27, Nwabueze teaches the objective function further comprises an aggregation (a data aggregating) domain for each data measure (col. 8, lines 52-55).

Regarding on claims 19 and 28, Nwabueze teaches automatically replicating (converts) a single constraint in the multi-dimensional format into multiple constraints in the multi-dimensional format, the single constraint including one or more coverage sets identifying multiples members of one or more data dimension to which the constraints applies (col. 6, lines 60-67).

Claims objection

4. Claims 7, 16 and 25 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Allowable Subject Matter

5. Claims 30-32 are allowed over prior art of record.

The following is an examiner's statement of reasons for allowance: None of prior alone or incombination neither teach or suggest "a sever to operable to: using a multi-dimensional data model, organize data stored at one or more data storage locations, the multi-dimensional data model including a plurality of data dimensions each including a hierarchy of members; receiving input from a user specifying a problem instance to be solved using an optimization engine, the problem instance specified by the user in a

multi-dimensional format, the optimization engine being unable to solve the problem instance in the multi-dimensional format, the problem instance including; a problem domain that includes all data in the multidimensional data model that is located hierarchically below one or more specified intersections in the multi-dimensional data model, each intersection (intersection) identified by specifying a member in each data dimension; an evaluation level specified by identifying a particular level in the hierarchy of each data dimension; an objective function including a data measure or a combination of data measures to be optimized; and one or more problem constraints; and communicate the problem instance in the multi-dimensional format; and

A transformation module operable to: receive the problem instance in the multi-dimensional format; transform the problem instance into a format appropriate for the optimization engine, the transformation including parsing the received problem instance to identify pre-defined multi-dimensional syntax and translating the multi-dimensional syntax to a syntax appropriate for the optimization engine; communicate the transformed problem instance to the optimization engine to be solved; receive a solution associated with the problem instance from the optimization engine; transform the solution into the multi-dimensional format; and communicate the transformed solution to the server.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Contact Information

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Baoquoc N. To whose telephone number is (703) 305-1949 or via e-mail BaoquocN.To@uspto.gov. The examiner can normally be reached on Monday-Friday: 8:00 AM – 4:30 PM, EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Breene can be reached at (703) 305-9790.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

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Washington, D.C. 20231.

The fax numbers for the organization where this application or proceeding is assigned are as follow:

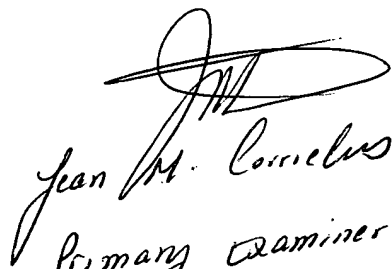
(703) 872-9306 [Official Communication]

Hand-delivered responses should be brought to:

Crystal Park II
2121 Crystal Drive
Arlington, VA 22202
Fourth Floor (Receptionist).

Baoquoc N. To

June 24, 2004


Jean M. Corrieus
Primary Examiner
Art Unit 2172